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HEALTH APHORISMS.

Dr. Frank H. Hamilton.

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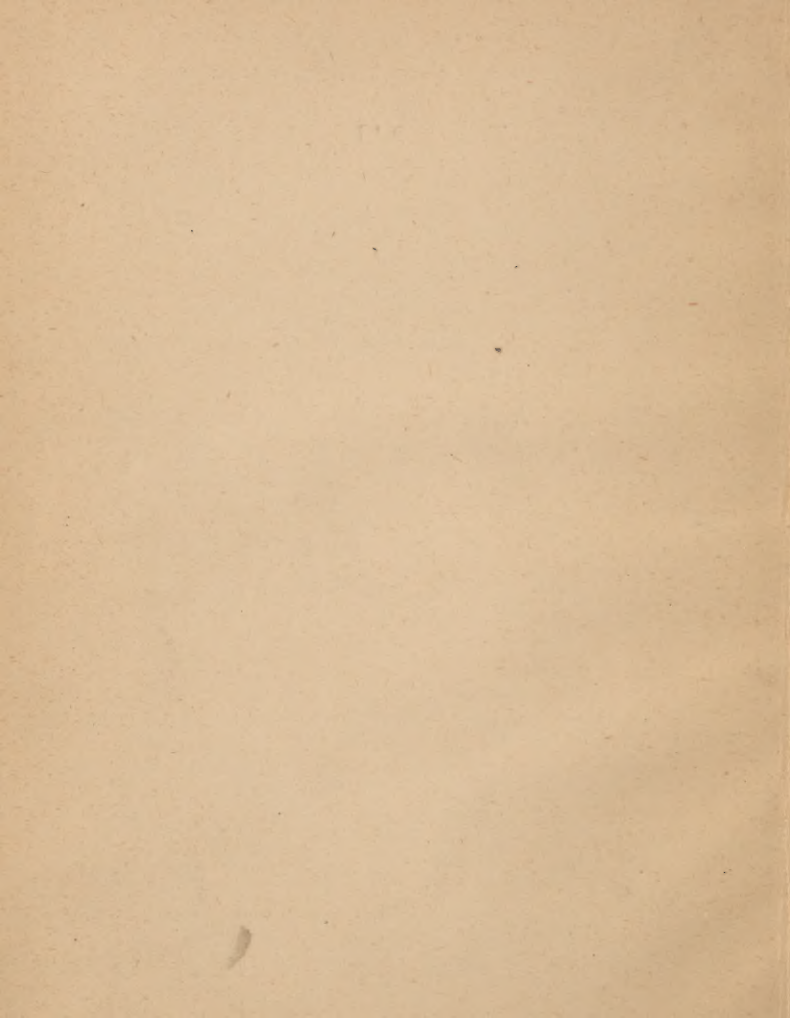
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HEALTH APHORISMS,

AND AN ESSAY ON

THE STRUGGLE FOR LIFE AGAINST CIVILIZATION, LUXURY,
AND ÆSTHETICISM,

BY

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PREFACE.

The following short paragraphs on the subject of General Hygiene were written during hours of leisure some years since for a much esteemed personal friend who was largely interested in life insurance; by whom they were subsequently published for the use of the several companies with which he was connected. They have been somewhat extended, and, by his consent, republished in their present form, in the hope that they may serve some useful purpose by disseminating a knowledge of the Laws of Health among the people.

The writer makes no apology for this intrusion. It seems sufficient to say that there is a manifest necessity for it. The doctrines of Divinity and the principles of Law are taught in so many ways both private and public, that the maxim "*ignorantia legis neminem excusat*" is equally applicable to both; "but if the Bible and statute books were the only channels through which their instructions could be conveyed to the people, many must have remained in ignorance even of those ordinances which are the most easy to comprehend.

"Medical books are sealed in a great measure even to the intelligent lay reader. Our opinions are seldom asked or discussed in public assemblies. The physician never enters the forum or pulpit. Even the daily prints, which are open to the other professions and might be made useful to ours, are so constantly filled with untruthful and scandalous advertise-

ments under the pretence of disinterested medical advice, that all physicians would refuse to occupy their pages even if permitted to do so.

“We have very few helps, therefore, in the work of diffusing a knowledge of the Laws of Health. The people cannot or do not reach the fountains. They do not go up to Siloam; and we must carry the buckets on our own shoulders, crying out at every man’s door—up and down—in the narrow passages and dwellings of the poor and before the mansions of the rich.”—*An address to graduates in medicine by the author, February, 1859.*

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HEALTH APHORISMS.

“ An ounce of prevention is worth a pound of cure.”
Old Proverb.

Hygiene is the Art of Prevention applied to disease; and consists in *literal* obedience to the Laws of Nature, governing the growth and development of man and other animals.

The laws of nature regulating human bodies can no more be violated with impunity, than the laws of nature which regulate the motions and harmony of the heavenly bodies.

The Art of Curing disease would be almost unnecessary if the Art of Prevention was universally understood, and practiced.

The allotted period of human life is threescore years and ten; but most human beings die, it is believed, before their 31st year: one-tenth die during their first month; and, in large cities, nearly one-half die before their 5th year.* There are no reliable statistics or observations, which can be re-

* “ The average longevity of those who died within the latest recorded years, was, in Massachusetts, 28 years and 3 $\frac{2}{3}$ months; Vermont, 36 years and 5 months; Sweden, 29 years

garded as determining the question conclusively whether human life is lengthening or shortening. If, as some suppose, it is lengthening, it will only prove that medical science is successfully resisting the most adverse influences.

All other animals than men generally live their full and allotted periods, unless destroyed by violence. Even plants have a better promise of complete life than man.

The thoughtless sarcasm of Rochefoucauld that "most men die because they cannot help it," is not true. The lives of most men are in their own hands; and as a rule the just verdict after death should be *felo de se*.

It is equally untrue that every misfortune and sickness is a "dispensation of Divine Providence." They are only Divine inflictions in the sense that they are the results of disobedience of Divine laws. Any statement to the contrary ought to be regarded as a poor apology for ignorance and indiscretion.

Men perish from bad air and from bad food, because they are ignorant of what constitutes good air

and 2 months; England, 29 years and 2½ months; France, 35 years and 11 months; Spain, 24 years and 4 months; Norway, 36 years and 6½ months."—*Edward Jarvis, M. D., on the "Increase of Human Life."* 1872.

and good food. They die of indigestion and of physic, because they do not know what causes indigestion, and that there is death in physic.

Whatever may be said as to the uncertainty of curative agents, and of the differences of opinion among medical men as to their relative value, there is very little difference of opinion upon the subject of hygiene and preventive medicine; yet in reference to the latter and most important branch of our art, of which we really know the most, the people to whom we minister, know apparently the least.

It is not Utopian to suppose that beings who rank highest in the scale of created existences, should hereafter attain the same immunity from disease and premature decay as is enjoyed to-day by the lowest. In our opinion, the knowledge of Hygiene, already possessed by medical men, if understood and *practised* by the people, is sufficient to ensure this result.*

* Life tables made up from insurance returns show only the value of selected lives; but they do not determine the longevity of the dissipated or debauched in any rank of life, or of the poor who have been driven to the wall by the pressure of accumulated wealth. Neither the very rich nor the very poor generally insure their lives; but, in most cases, policies of insurance are held by persons in the middle ranks, who, as a rule,

AIR.

Human life is chiefly sustained by the oxygen of the air and by food. Exclude either, and life will cease.

Breathing converts oxygen into carbonic acid gas ("choke damp").

Carbonic acid gas, if inhaled, is a deadly poison. Being heavy, it is found especially at the bottom of wells, in deep caverns, in basements, and in all occupied rooms near the floor (if the room is heated however, some of it will ascend).

This gas, created by breathing the air, destroyed the lives of 123 persons in 11 hours, in the "Black Hole" of Calcutta, in the year 1756. Many millions of human beings have lost their lives from the same cause since the date of this occurrence; yet not always in so short a space of time.

Forty out of every one hundred die of impure air: of this number it is fair to estimate that twenty die directly or indirectly from the influence of car-

have the best habits, and the best chance for life. See "Influence of Civilization on the Duration of Human Life," by Charlton Lewis, Esq.; "The Increase of Human Life," by Edward Jarvis, M. D.; Mr. Ray Lankaster, on "Comparative Longevity"; Dr. Hough, of Philadelphia, on the progressive decline in the vitality and longevity of the American people.

bonic acid gas, as the result of overcrowding, and of badly ventilated rooms.

Typhus fever has its source chiefly in the impurities of the atmosphere caused by the breath and exhalations of human bodies.

TEMPERATURE.

Excessive heat, long continued, is detrimental to health. It causes, in man, enlargement of the liver, jaundice, indigestion, diarrhœa, dysentery, dropsy, &c., and hastens the fatal termination of a majority of human maladies. In geese it causes the enlarged liver, employed in making the celebrated *pate de foie gras*.

Excessive cold, long continued, is less prejudicial than excessive heat, except to the old and feeble.

Exposure of a limited portion of the body to cold disturbs the equilibrium of both the nervous and vascular systems, causing local congestions, or "colds."

"If the wind strikes you through a hole,
Go count your beads and mind your soul."

—*Old Proverb.*

Do not stand long upon the cold ground on a

warm spring day. It is equally dangerous to sit upon anything cold on a warm day.

Keep the head cool and the feet warm.

Sudden changes of extreme temperature are not necessarily injurious. If the heat or the cold is applied only for a few minutes, as in certain baths, &c., it often proves invigorating.

The most perfect examples of physical and mental development are not usually found in regions having the most uniform temperature, but in those which have a considerable range of temperature.

Exercise in the cold air contracts and strengthens the muscles, and toughens the sinews.

In general, the best temperature for health is that in which one cannot be comfortable for any length of time without exercise. With most persons this is a temperature of from 58° to 63° Fahrenheit.

Radiated heat is better than heated columns of air. The sun, and an open fire-place or grate furnish radiated heat.

Hot-air furnaces, with registers opening directly into the rooms, supply only heated columns of air ; which are generally dry and impure. Rooms thus warmed are first and most heated near the ceiling.

Air heated by red-hot, or very hot iron, is rendered in a great measure unfit for respiration.

MOISTURE.

Neither very dry, nor very moist air is the most wholesome.

Most houses heated by close stoves, or by hot-air furnaces, require the evaporation of from two to four gallons of water daily.

Nations inhabiting regions which are excessively moist, become strumous and tuberculous ; while people living habitually in very dry regions become thin, wiry and nervous.

VENTILATION.

The chief object of ventilation during the summer is to remove the air which has been breathed, most of which lies near the floor ; and, also, to remove the air consumed by the burners, candles or lamps, which, in general, is near the ceiling. An open fire-place, together with a large hole in the chimney, near the ceiling, is generally sufficient ;

but an open door, or long windows, open at top and bottom, are often required in summer to complete the ventilation.

It is more difficult to ventilate a close room in summer than in winter, because in summer there are no fires to create a draft or to move the air.

A large, open fire-place, a Franklin stove, or an open grate with burning coals, are the best ventilators ever invented.

Ventilation is more necessary at night than during the day, because the rooms are more constantly occupied; yet ventilation is then more difficult, for the reason that the fires are out, and the doors are not opened and shut.

Rooms heated by close stoves, by hot-air registers, or by steam-pipes, require always artificial ventilation; but artificial ventilation is seldom complete.

Do not take fresh (?) air from a cellar! Vegetables in a cellar, and even the common moulds of cellars, poison the air.

Heat ascends, and a hole in the top of the room discharges the heat before it has warmed the room; but such holes are needed to allow the impure gases from burners, etc., to escape.

A hole near the floor of a room (an open fire-

place, or the bottom of a window) is the most useful for the escape of impure air ; and especially because it compels the warm air to descend again before it can make its exit, thus equalizing the warmth and establishing a thorough circulation.

Low ceilings are detrimental to health.

Most of our public and private school rooms, our lecture rooms, opera-houses, theatres, court-houses, hospitals, prisons, alms-houses, work-shops, printing houses, editors' rooms, counting rooms, reading rooms, public libraries, railroad cars, steamboat saloons, emigrant vessels, are so imperfectly ventilated that analysis of the air will generally show them to contain from 25 to 75 parts of carbonic acid in every 10,000 parts of air. This is a poisonous quantity. The out-of-door air, even of cities, never contains more than 15 parts in 10,000.

Open your windows at night. Night air is seldom, if ever, so poisonous as your own breath.

Turn off your burners at night. One burner will generally consume as much oxygen as five or ten persons.

For the poor, the cheapest fuel is food, exercise and pure air.

Whiskey is a more costly fuel than wood or coal.

It requires ten degrees more heat to keep warm in a close room heated by burnt air, (from hot-air furnaces, close stoves, &c.), than in a well-ventilated room, heated by radiated heat (from an open fireplace, &c.).

Pure air kindles and sustains a fire *within* the body. This internal fire is, however, quickly extinguished by carbonic acid (manufactured in breathing).

DEBIT AND CREDIT ACCOUNT OF HOT AIR FURNACES.

Cr. No smoke ; no dirt ; less labor ; an atmosphere throughout the house, especially during the day, causing a sense of languor, and encouraging repose and sleep.

Dr. Disturbed sleep at night ; colds ; coughs ; croup ; consumption ; debility ; nervousness ; irritability ; neuralgia ; headaches ; vertigo ; weariness ; general loss of health ; loss of beauty ; loss of life ; doctors bills.

The same applies to hot-steam furnaces, with only a slight abatement in the debits.

PLUMBING, SEWERS, &C.

Large sewers generate unwholesome gases, and develop poisonous germs ; they may also be the channels through which the poisonous germs of cholera and of other zymotic diseases are conveyed from house to house.

Experience and science have both demonstrated that it is not safe to occupy apartments at either **end of a public sewer.**

That end of a sewer which is the most elevated and which is usually connected with our houses, is the most dangerous, because the gases generally tend upwards, and the currents of air in the sewers are most often in this direction.

There are no means yet devised by which the poisonous gases and germs can be effectually or for any great length of time, excluded from apartments with which the sewers are made to communicate.

The admission of one germ of a zymotic disease is as fatal as the admission of a thousand. Germs multiply rapidly and infinitely by self-propagation. It is not the number, therefore, but the malignancy of any specific germ which determines its fatality.

If water closets are in any way directly connected

with a house, to ensure the greatest safety to the occupants they should be daily flushed and disinfected.

Water closets without traps, are the ventilating chimneys of the sewers into which the closets drain.

In addition to traps, water closets require ample ventilating shafts, through which columns of warm air should be made to ascend to ensure an upward draft.

Water closet drains terminating in the soil propagate cholera, and other infections, as far as their sewage reaches along the surface, or by soakage. When earth is thus infected it should be covered well with quick-lime, and the wells in the vicinity should be abandoned.

A tempest of wind and rain has often temporarily arrested the progress of the most fatal epidemics.

LIGHT.

Light is essential to the perfect life of most vegetables and of most animals.

To render a plant brittle and watery, the gardener excludes from it completely the rays of the

sun. Etiolation has the same effect upon man and other animals.

Without light, man becomes scrofulous, rickety, goitrous, consumptive, and dies in a state of premature decrepitude.

Children reared without light and air are in the animal kingdom what good celery is in the vegetable kingdom, white and succulent; but they wilt under the slightest touch of frost, and are broken under the slightest pressure.

Children should not be sent into parks with their faces veiled. Patients on the sunny side of a hospital ward recover the soonest.

Light gives a bronzed, or "tan" color to the skin; but where it uproots the lily, it plants the rose.

Light is one of the most valuable disinfectants.

Air and light, are among the best medicines known to man.

RESIDENCE.

In choosing a residence inquire of some person who formerly lived in that neighborhood, but has sold out.

Strangers are more liable to contract the diseases peculiar to certain localities than old residents. Says Pliny, "Those who are seasoned can live among pestilential diseases."

One case of fever-and-ague originating in the soil, establishes its insalubrity.

A region which abounds in mosquitoes generates also fever and ague. They both subsist upon the same germs.

Avoid fresh water marshes, stagnant pools, newly opened fields, or fields from which the trees have been recently cut.

Turning up the soil for purposes of cultivation or drainage, except in winter, will often cause sickness, especially in times of epidemics.

Fresh water covering the ground is healthy; but ground lately covered with fresh water is unhealthy.

A moist cellar is more dangerous than a wet cellar.

Moulds and decaying vegetables in a cellar weave shrouds for the upper chambers.

A basement room is never healthy. The moist and poisonous vapors which float along the surface of the earth are constantly pouring into and occupying these, their natural receptacles.

A house whose windows are covered by vines, or

shaded by trees, or by mountains, cannot be healthy; since it can be neither light nor dry.

The most sickly and deformed races inhabit the deepest valleys. Witness the miserable inhabitants of the Haute Vallais, Switzerland, called "cretins."

The tallest and most hardy races are found upon mountains; and upon dry, open plains.

A dry, porous soil—sand or gravel—which is not underlaid with clay, or with some other material impermeable to water, is the most healthy.

A rich, alluvial soil, underlaid with clay, is the most unhealthy. Thus, the food of plants becomes the bane of man.

Districts habitually preferred by epidemics are insalubrious at all times.

Decaying vegetable matter is much more poisonous than decaying animal matter.

We cannot determine the unwholesomeness of the atmosphere by the offensiveness of its odors.

Vapors not recognized by the sense of smell often carry the most fatal germs, and are the most deadly in their influences when breathed or absorbed by the surface of the body.

Drain and dry your country premises thoroughly before you occupy them.

Do not drink surface water without filtering or boiling.

Pure rain water is wholesome.

The old, feeble, and decaying require a mild climate.

A cold winter extinguishes feeble tapers, but gives brilliancy to those which are well supplied with oil.

Middle latitudes possess the most healthy climates.

The mortality of large cities is nearly twice as great as the mortality of non-malarial districts in the country. In cities having a population of half a million or more, the ratios of births and deaths are generally nearly equal. If such cities increase in population, therefore, it is mostly by immigration.

Cities are especially fatal to infants.

The lowest parts of cities have the highest rates of mortality.

A change of air is of less value than a change of scene; unless it be a change from an impure to a pure air. The air is changed every time the direction of the wind is changed.

Air coming from over the sea, is like air coming from over the land, except that it is usually in sum-

mer cooler and more moist, and it is free from malaria. Beyond the reach of the spray it contains no salt, or other properties which can properly be called medicinal.

When invalids speak of the sea air as being too "strong," they should be interpreted as saying that it is too cool and moist for them.

DRESS.

Habit determines, in a great measure, the amount of clothing one ought to wear.

The face and hands need no covering, simply because they are unaccustomed to covering.

Portions of the body which have been habitually covered cannot be safely exposed to the cold.

It exposes one to cold to cut short the hair or beard, to substitute a felt for a fur hat, shoes for boots, to dress in a low neck and short sleeves, after being accustomed to a high neck and long sleeves, to throw off or loosen a fur cape when out of doors.

Fur capes ought never to be worn in this climate, except when riding in a sleigh or carriage.

Clergymen would have sore throats less often, if,

instead of wrapping their necks with folded linen, they were to leave them constantly open and exposed.

The brain receives more blood, in proportion to its size, than most other organs of the body. Hence it follows that tight cravats and tight shirt bands (which impede the return of blood from the head, by compressing the external jugulars,) cause congestion of the brain, vertigo and apoplexy. Many public speakers and men of letters have died from this cause.

That portion of the dress which encloses the ribs should be at all times so loose that the whole chest, and especially its lower portion, may expand to the full capacity of the lungs. If this were practised during the entire period of growth and development, the chances of dying prematurely from consumption and many other maladies would be greatly diminished.

The natural form of a woman's waist is broader below than above. Moderate, but long-continued pressure about the chest and loins, has, in the case of most women belonging to civilized nations, reversed this order of nature, and has given to the waist the significant shape of an *hour-glass*.

This practice—notwithstanding it displaces and affects injuriously the heart, lungs, liver, spleen, stomach and other important organs, cramping and arresting, even, the growth of the offspring—is, we are sorry to say, subject only to Fashion—a tyrant who acknowledges no allegiance to the laws of Nature or of God.

Woolen is, in this climate, the best under-garment during most of the year.

Women (and all persons who live much in-doors) need warmer clothing and thicker boots out of doors, than men.

Short shoes, high heels and narrow toes entail corns, bunions, and cause unsightly deformities of the feet.

BATHING.

A cold bath is invigorating when it is speedily followed by a sensation of warmth. Cold baths are dangerous to the old and feeble. It is dangerous to plunge into cold water when the body is cold or chilly; or after having partaken of a full meal.

Warm baths are relaxing, and should not be taken in the morning.

Hot baths, at a temperature of from 105° or 110° Fahrenheit, are more stimulating and in general more safe than warm baths.

Old people, and persons suffering occasionally from vertigo, or who have disease of the heart, lungs or kidneys, should not bathe in cold water, whether salt or fresh.

If baths are taken at home, the morning, immediately on rising, is the best time for a cold bath; and the evening, just before retiring, is the best time for a warm bath.

Sea bathing is, in summer, a cold bath; the temperature being below the natural temperature of the body, and usually cooler than the atmosphere.

The advantage of sea bathing is not in the peculiar quality of the water, so much as in the fact that the tumult and succussion of the waves causes excitement, and a prompt reaction throughout the whole system.

If the air is cold or cool, a short run or rapid walk before the plunge, is advisable.

The feeble, and those unaccustomed to sea bathing, should not spend more than three or four minutes in the water; and they should be well shampooed on returning to the bath house.

The best time for sea bathing is usually about 10 or 11 o'clock in the morning, when the air is warm enough to secure a thorough reaction on leaving the water, if it has not taken place before.

Still sea bathing does not differ essentially from cool fresh water bathing.

EXERCISE.

Exercise, or the use of every organ of the body, is necessary to the healthy and full performance of their functions. When any organ is in complete and prolonged disuse it tends inevitably to decay.

A person whose mind has been actively employed all the day, in the counting-room, upon the bench, or in the study, needs in order to restore the balance, bodily exertion conjoined with complete mental relaxation. In other words, his exercise ought to be agreeable and entertaining.

Sawing wood, vaulting in a gymnasium, the "health lift," "parlor rowing," swinging dumb-bells, calisthenics, long, solitary walks, carriage riding, are better than no exercise at all; but fishing, hunting, skating, ball-playing, rowing, wrest-

ling, or marching to the sound of soul-stirring music, laughing and rollicking, are much better.

Horse-back riding, out of doors, combines more qualities of healthful exercise than any other. It secures air, light, exercise and pleasure.

A horse—one horse a day—taken regularly, is both a preventive and a cure for nearly all human maladies. To some, advice must be given to ride slowly; but to others we may say in the language of the old polypharmaceutists: "When taken to be well shaken."

No man can ride a spirited horse and calculate logarithms.

Advice to poor congregations:—Build a stable; purchase a horse and saddle; endow the whole sufficiently, and when the horse is duly installed install the pastor. This will save the necessity of a trip to Europe once in three years.

Playing billiards, croquet, or lawn tennis, do not contribute much to muscular development.

Forty-eight hours of company and regimental drill in three hundred and sixty-five days, does not make a reliable soldier on a long march.

Amateur yachting, with plenty of wind and weather, even when "Jack" mans the ropes and

stands by the rudder, is always a very pleasant recreation; and may be made very healthful, whenever there is not too much wine mixed with the weather.

Driving fast horses, with the feet braced and the legs muffled, oscillating in a dog cart or sitting upon a drag and handling the "ribbons" skillfully, can hardly be called exercise.

The recent revival of coaching, four-in-hand—"Tally-Ho" and "Tantivy"—with the echo of the horn through the valleys and over the hills, restores to travel, in some measure, its ancient reputation as a source of real pleasure and health.

A biceps hardened by the use of dumb bells or by any other method, cannot be accepted as evidence that every muscle and organ in the body has had proper exercise, and that they are all now in good working order.

"Robust and manly" exercises imply some peril to limb or life, by which both mind and body shall be kept constantly on the alert.

Health must be earned; it can seldom be bought.

HOW TO TRAVEL.

The best mode of travel is on foot or on a saddle; the next best, is in an open carriage or in an

old-fashioned stage coach. A sea voyage, and almost any mode of traveling by water, is, in general, useful; but it would be a most serious practical joke if any one were to advise an invalid to seek for health in a railroad car.

GIRLS AND BOYS AT SCHOOL.

Girls need health as much—nay *more*—than boys. They can only obtain it as boys do, by running, jumping, tumbling—by wild, loud, and boisterous mirthfulness, and by all sorts of innocent vagrancy.

At least once a day girls at school should have the halters taken off, the bars let down, and be turned loose like young colts.

Calisthenics, with a march of one hour each day, in solemn procession, along paved streets, is no guarantee against crooked backs and broken constitutions; but four hours unrestrained romping, in an open field, will make these girls as straight and as fleet as an arrow.

Calisthenics may be very genteel, and romping very ungenteel; nevertheless, the one is but the shadow, the other the substance of healthful exercise.

Children under six years of age ought never to be put to the study of books. From six

to ten years, three hours per day should be the extreme limit of confinement to study, or to any sedentary employment. From ten to fifteen years, four hours. From fifteen years (after puberty) to twenty, six hours; and at no period of life ought the time thus occupied to exceed seven hours.

SLEEP.

Infants, and, in general, the old and feeble, require the most sleep.

Most adults require seven hours; but habit and circumstances may render more or less necessary.

Be regular in your hours of sleep. Never go to sleep on a full stomach; nor sleep in a warm room.

A clear conscience with contentment are the best anodynes; and a merry heart is the best tonic.

Gloomy thoughts impair the appetite and prevent sleep. The poor and unfortunate magnify and increase their misfortunes by too much thinking.

“Blessed be he who invented sleep,” but thrice blessed the man who shall invent a cure for thinking.

FOOD.

A feeble or sickly mother can no more furnish wholesome milk, than a feeble or sickly cow.

The best wet nurse is the woman who has a light heart, drinks no stimulants, and eats the most roast beef and potatoes.

Milk drawn from a woman who sits within doors and drinks whiskey or beer, is as certainly unwholesome as milk obtained from stalled cattle fed upon beer or whiskey slops.

When teeth appear, milk ceases to be the only natural food.

Man is neither carnivorous, grammivorous, herbivorous, or vegetarian; but he is omnivorous, requiring for his most perfect development a greater variety of food than any other animal.

When the tearing teeth—eye and stomach teeth—appear, nature demands meat.

Meat is more necessary in winter than in summer; in cold climates than in warm.

A prolonged diet of meat only causes scurvy.

A diet of vegetables and fruits exclusively, causes scrofula and skin diseases. It develops consumption. This is as true of women as of men.

Eat vegetables and ripe fruits freely, in their season.

Food, whether meats, vegetables or grains, are not of necessity aliments because they have been conveyed into the stomach. They need to be digested and assimilated.

The stomach is not always in a condition to extract nourishment from food.

The stomach generally refuses to digest food which is not palatable or appetizing.

Eat slowly, and do not season your food with care.

Anxious thoughts disturb digestion.

Large armies have always suffered more from a deficient supply of proper food than from a deficient supply of medicines; and General Scott used to say that "beans had killed more than bullets."

STIMULANTS AND NARCOTICS.

Stimulants, such as wine, beer, whiskey, rum, gin, brandy, &c., are not food; but they are good medicines, when properly administered.

Stimulants exalt nervous action temporarily, and compel the wheels to revolve rapidly; but they sup-

ply no threads to either the woof or warp, and, sooner or later, break the shuttle.

The man who has eaten one pound of beef, daily, for one year, does not find it necessary, in order to obtain the same effect, to eat two pounds daily for the next year; but he who drinks one pint of whiskey daily for one year, must take two pints daily the second year to obtain the same effect.

Any article of food or of drink, the use of which creates the necessity for larger quantities, and at shorter intervals, in order to attain the same mental or physical elevation, by that fact proves itself pernicious.

Stimulants may be employed as medicines, to encourage digestion temporarily, to sustain life until nourishment can be introduced; or, in declining life, to enliven an existence which nature has limited, but which she will no longer attempt to repair or prolong.

Stimulants, habitually used, cause indigestion, inflammation of the stomach, disease of the liver, of the kidneys, and of the bladder, chronic diarrhœa, piles, neuralgia, nervous tremors, paralysis, insanity, idiocy, rheumatism, gout, dropsy, sore eyes, eruptions, carbuncles, boils, tubercles on the nose, ulcers

on the legs. They fill the alms-houses, dispensaries and prisons; they supply the gallows with most of its victims, and occasion, directly or indirectly, one half of all the poverty, suffering and sadness which clouds this world.

It is no proof because a man grows fat, and his face becomes red under the use of stimulants, that he is improving in health.

Cholera, and all other pestilential diseases, make their first visits to those who use, habitually, stimulating drinks.

Dirt, debauchery, disease and death are links of the same chain.

If stimulants must be used by those "who, being well, would wish to be better," no doubt ales and wines are to be preferred to alcoholic drinks.

Coffee and tea are modified stimulants, whose influences are more exactly limited to the nervous system than alcoholic stimulants. Habitually used in excess, they cause indigestion, emaciation, neuralgia, paralysis, impaired vision, wakefulness, restlessness, palpitation of the heart, &c. They are, however, sometimes excellent medicines; and may be drunk in moderate quantities by most persons who are in health without doing appreciable harm.

Of tobacco, FRANKLIN has said that "he could not think it had ever done much good in the world, since he never knew a person who used it habitually who would recommend another to do the same!"

Tobacco is certainly not food for man, nor has it much value as a medicine. The tobacco worm is the only animal known to thrive upon its use.

Tobacco causes neuralgia, paralysis, especially of the nerve of vision, tremors, &c. It impairs the appetite, dries up the fluids, gives a dirty, parchment color to the skin, stains the teeth, makes the gums spongy and tender, renders the breath foul, and causes not unfrequently cancer of the mouth, lips and tongue.

The habitual use of opium and other narcotics causes neuralgia, restlessness, wakefulness, paralysis, indigestion, innutrition and dropsy.

BURNS.

Burns caused by the explosion of kerosene or coal oil, and other burning fluids, are, in nearly all cases, extensive and fatal.

About one woman or child each day is con-

sumed by them, and has been ever since they came into general use.

We will not say that it is impossible to render these fluids safe, but it is certain that, in spite of penalties, it has never been done, and we believe it never will be done.

Those who have not gas in their houses should use lard-oil lamps or candles.

CAUTIONS NECESSARY IN THE USE OF KEROSENE,
ETC.

Trim the lamps by daylight only, and screw on the top firmly.

Never attempt to fill a lamp while it is lighted. Never light a lamp which is only partially filled.

Never blow it out. In doing so the flame has often been thrown down into the lamp and an explosion has ensued. Lamps nearly exhausted are more liable to explode from this cause than full lamps; the upper part of the lamp being then filled with the vapor of the kerosene, which is more combustible than the kerosene itself.

Lighted, and nearly empty lamps sometimes explode spontaneously; or from the slightest disturbance, as in taking them up from the table. This is especially liable to happen if the lamp has

been burning all night, and it is moved in the morning.

Never kindle a fire with kerosene by pouring it from a can.

Do not set a can or lamp on a warm stove.

Do not carry a lamp which is burning, and not entirely full, from a warm to a cold room. The vapor in the lamp becomes condensed—air rushes in, and an explosion ensues.

Do not let a lighted lamp fall. Whether the lamp breaks or not, an explosion is likely to occur, sending the fluid, already on fire, through the whole room.

The only way in which these fluids can be burned with any degree of safety is in stationary and immovable lamps.

The tests employed by dealers to convince their customers of its safety, are generally unreliable.

The cheapest is in general, the most dangerous: but not always.

Never go to bed with a lamp or candle burning.

Do not read by candle or lamp light, after lying down.

Loose, cotton dresses should not be worn by those who work about open fires. Woolen is safe.

The draft of an open grate or fire-place is often sufficient to draw into the flames a lady's dress.

Cover all open grates and fire-places with wire fenders. It will save your family from at least one serious accident every five or ten years.

The quickest way to extinguish a burning garment is to smother the fire. If a skirt, or a gown is on fire, draw it up to the waist, wrap it close upon the body, lie down and roll over; or envelope the whole body, except the face and head, in a blanket, or a woolen shawl.

Attempts to tear off the clothes, and searching for water, is generally a fatal loss of time. Running fans the flame !!

As soon as possible, when the fire is out, pour cold water over the clothing and burnt parts. An egg continues to cook after it is taken from the hot water, unless it is suddenly cooled.

The most convenient domestic dressing for a large burn is cotton batting, saturated with sweet, linseed, or neats foot oil.

DROWNING.

It is a popular error that in drowning the stomach and lungs become filled with water, which can only be got out by holding the person up by his heels.

Death is caused in drowning in the same manner as it is when one is smothered between two feather beds: by want of air alone.

Lay the person on his back, and turn him over upon the side once in five seconds. This will expand and diminish his chest in imitation of breathing.

Warm the whole surface of the body as speedily as possible. This will encourage the muscles of respiration and the heart to act.

If attempts are made to blow into the lungs, the tongue must be drawn out of the mouth, and held by a dry towel, the gullet grasped behind the wind-pipe and the mouth of the operator applied directly to the mouth of the person drowned.

Electricity, galvanism or smart, quick strokes with the palm of the hand over the chest, may be useful.

VACCINATION.

If any fact in medicine is established, it is that, with proper precautions, vaccination is useful and harmless.

Be carefully re-vaccinated about once in every eight or ten years.

Be certain that the vaccine matter is taken from a person who is not diseased, or that it has been obtained direct from the cow (Bovine virus).

MEDICINE AND DOCTORS.

More people are killed by too much medicine than are allowed to die for want of medicines.

Dr. Holmes has said that "it would be well, perhaps, if all medicines were thrown into the sea. It might be bad for the fishes, but it would be better for mankind."

In our opinion it would be better if most of the drug stores and all of the liquor stores were converted into diet kitchens for the poor.

When Hahnemann formulated and promulgated his famous doctrine of infinitesimals, no doubt he sought to demonstrate the fallacy of the popular

opinion that disease could never be arrested without the interposition of medicines. This is the only rational explanation of his "*Organon de Medicini*," if we admit that he was a man of sound mind. His disciples, therefore, in rejecting this fundamental doctrine—that upon which alone all his original discoveries were made—practically declare that they have not understood the intelligent and humane purpose of their great master.

The first and chief purpose of medicine is to *remove the cause* of disease. When this is done, nature, with the aid of nourishment, will generally accomplish the cure.

In most cases, however, the counsels and medicines of the physician are necessary during the whole progress of the disease, to ensure the most speedy recovery. When a vessel is sailing among rocks, in a heavy sea, she needs a pilot.

What people call "*bile*" is generally lobster, clams, or some similar indigestible food. Fasting or a dose of physic will remove it.

Do not take medicines when you are well.

Throw away at once every medicine which is not distinctly labelled.

When you "*throw physic to the dogs*," make

yourself certain that those animals you value are not within reach of it.

Never keep a medicine on hand of which a child may not take a table spoonful with safety.

Do not employ that physician whose patients have always been very sick before they recover ; but employ him whose patients most often recover without having been very sick.

The Irishman said " his physician stuffed him so with medicine that he was sick a long time after he got well."

Do not tempt your doctor to give you medicine by refusing to pay for advice. Good advice is always worth paying for.

The most expert physicians are often in doubt as to the exact nature of the diseases they are called upon to treat. In such cases, it is better to wait until the doubts are removed, inasmuch as it has often happened that a blow aimed in the dark has hit the patient, and not the disease.

New remedies are not always good remedies. It is safest in most cases to use remedies with the effects of which long experience has made us familiar. It is dangerous to handle weapons with the use of which we are not practically acquainted.

Many of the so-called "new remedies" are old remedies disguised by skillful pharmacists and druggists. An equal proportion perhaps are actually new, but worthless or dangerous. A few only ever prove to be valuable substitutes for those whose places they are intended to take. In medicine, as in all other arts and sciences, really valuable discoveries, such as will bear the test of time and experience, are exceedingly rare.

Never take a medicine which is advertised, or employ a doctor who makes extraordinary pretences, or who has a patent or secret remedy. Honest and truly skillful physicians have no secrets, and never resort to such means to secure patronage.

Any medicine capable of doing good if rightly administered, is capable of doing harm if wrongly administered.

If, therefore, a friend were to say, "Be persuaded to take this, for if it should do you no good, it can certainly do you no harm," you will refuse to accept of his advice, for the reason that his own declaration proves the medicine to be useless.

If, however, he were to say, "Be persuaded, because I have known it to cure others," you will

refuse, also, to take it, for the reason that this statement in itself proves that it is capable of doing harm unless administered by skillful hands.

What then—must every one who *wants* a dose of salts, or of senna, send for a doctor? No, certainly not. This would be both costly and vexatious, and nothing could be farther from our meaning. We only intend to say that every one who *needs* a dose of salts or of senna should send for a doctor.

THE STRUGGLE FOR LIFE AGAINST CIVILIZATION, LUXURY AND ÆSTHETICISM. A SUPPLEMENT TO THE DISCUSSION OF FEBY. 2, ON PLUMBING,* ETC.

BY

FRANK H. HAMILTON, M.D.

On the evening of Feb. 2, a large assemblage of physicians was gathered in this hall, to listen to a paper and a discussion on the subject of plumbing in particular, and house construction, and house sanitation in general. The speakers included some of our most experienced hygienists—Gentlemen who, for the most part, have enjoyed a large practical experience in matters of general and special hygiene.

The President, Dr. Fordyce Baker, first gave a graphic account of the dangers which surround us, both in our city homes and our country and sea-side residences, from the almost universal presence of poisonous gases generated in the sewers; a danger to which, it would seem, the rich are exposed quite as much as the poor; the latter of whom live mostly in crowded tenement houses, and have, for this reason, been hitherto supposed to be the chief sufferers from the effects of noxious sewer gases.

* Read before the New York Academy of Medicine, March 16th, 1882.

Dr. Barker, whose practice is chiefly among our most wealthy citizens, had almost daily occasion to witness, what he thought every physician present must have witnessed, typhoid fever, diphtheria, scarlet fever, diarrhœa, etc., which were either caused by sewer gas, or greatly aggravated and rendered fatal by this cause.

Dr. Barker then introduced Mr. Chas. F. Wingate, a well known sanitary engineer, and a man of large practical experience. In a paper of considerable length he devoted himself especially to the subject of defective plumbing. Before commencing the reading of his paper, however, he entered a verbal protest against the too hasty conclusion to which some had arrived in view of their own unhappy experience, that they would not hereafter allow any plumbing in their houses, but would return to the out-door closets, and dry wash-basins. He thought he could show that this retrogression toward early simplicity and barbarism was unnecessary.

I propose in the present paper to recall briefly the sources of impure air in our dwellings, as set before us by Mr. Wingate, and by the gentlemen who took part in the subsequent discussion, and the remedies which their experience enabled them to suggest.

We have bad plumbing, says Mr. Wingate, because we occupy houses built by "jerry" contractors, who construct buildings to sell, and not for

themselves to live in. He proposes, therefore, as the remedy first in the order of time and of importance, that no man should occupy a house not built by himself, or under his own immediate supervision. A remedy which, as will be readily seen, is wholly beyond the reach of ninety-nine out of every one hundred of our citizens; and which, therefore, does not now, and cannot probably ever in the future, meet the exigencies of the case. The vast majority of our citizens have neither the time, money or knowledge required to build, or to superintend the building of their own houses; and it is fair to assume that they will never do it.

No one should buy a house, says Mr. Wingate, without a legal document which will hold good in the courts, and entitle the buyer to damages in case the plumbing should prove to be defective, and sickness result in consequence.

Mr. Wingate is correct no doubt, in supposing that an appeal to the pocket of the builder would be the most direct way of securing honest work; but the builder may be, and probably often is, deceived by his own plumber; or he may be quite willing to take the chances against the discovery of his dishonesty being made within a period of several years; when it might be found very difficult to determine whether the work was originally defective, or had become so by the lapse of time, or the bad work of some plumber subsequently em-

ployed, or from many other causes for which the builder could not be justly held responsible.

Moreover the buyer, in this arrangement, proposes to "get square" with the dishonest seller at some future day, by laying before him the dead bodies of his wife and children, and demanding their money value—the price of what is priceless—for it is more than probable that sickness and death will be the first evidence he will have that the work was badly done.

If any man does undertake to build for himself, says Mr. Wingate, he must employ a competent and honest plumber, and pay his price, asking no questions, inasmuch as it is impossible for any plumber to know in advance what his labor and material would be worth. This suggestion is undoubtedly just and reasonable; but how are we to know who are competent and honest? Unfortunately, plumbing has mysteries which the ordinary mind—the mind of the uneducated citizen—is not capable of penetrating. One plumber tells us that a great many pipes, and a great many valves, goose-necks and ventilating flues are required; whilst another, of equal reputation for honesty and practical experience, informs us that the more we multiply these things the more we increase the evil. One insists upon the adoption of one plan or patent, and another insists upon another; both of which are declared to be utter failures by a third. The generally received opinion on the part of the

public is, that very few or none of the plumbers understand their business, or are honest in the application of the little knowledge they possess. Sanitary engineers have generally endorsed this public sentiment, and even Mr. Wingate intimates the same when he speaks of the urgent necessity there is for "schools" for the purpose of training young men to the art of plumbing; and he distinctly states that "there is probably only one architect in the city competent to execute the specifications for the plumbing of large houses."

I am much more charitable to the plumbers and architects than either the public or the sanitary engineers. It seems to me quite probable that most of them are as honest and competent in their special departments as any other class of artisans: but that they have been asked and have undertaken to do what cannot be done; and so it has happened that those who have perhaps done their work in the best manner, and have sought most zealously to prevent the admission of sewer gases into our houses, by a multiplication of pipes, traps, &c., have, as some plumbers and most scientists frankly declare, only increased the evil; for the truth seems to be, that none of these pipes and valves, whether made of stone, lead, or iron, can be made for any great length of time impervious to the poisonous gases. So far as stone and brick are concerned, this is what Professor Doremus demonstrated to the Academy by several ingenious experiments. He

blew out a candle through an eight-inch brick wall; and sent a jet of hydrogen gas through a very dense block of sandstone, sufficient to cause, when ignited, a steady flame. His experiments demonstrated, also, that hydrogen gas would penetrate rapidly, without pressure, the walls of an unglazed earthen vessel. Prof. Doremus also declared, on the authority of the late Prof. Draper, that gases, in their efforts to escape, would resist successfully a pressure of twenty atmospheres.

Speaking of pipes made of iron or lead, Mr. Wingate said it was only a question of time when they would become corroded, and actually perforated by the action of the gases; and he showed specimens of both iron and lead pipes thus perforated. It would be impossible to say how much time would be required to effect this result, as much must depend upon the thickness and quality of the pipes, and upon the amount and character of the gases, but sooner or later these results were inevitable. The goose-necks, upon which especial reliance must be placed to exclude the gases, were especially liable to become perforated by the erosive action of the gases.

If we had any, even approximative, means of knowing how long the pipes would last, we could—say every 5, 10 or 15 years—tear out and renew all our plumbing and render our houses comparatively safe; but we have not, and, from the circumstances of the case, we probably never shall have

such knowledge; and we must continue, as heretofore, to wait until some unexplained sickness in the family has awakened our suspicions. In order to render plumbing perfectly safe it must last as long as our houses last.

When, from settling of the walls, or the action of the gases, or from any other of the many possible causes, including original defective plumbing, a pipe is leaking, the whole plumbing from the top of the house to the basement must be laid open for examination. Nothing less than this, said Mr. Wingate, would satisfy a good plumber; for there may be many leaks or defects at the same time. Pouring the oil of peppermint into the pipes at the top of the house might, in case of doubt, determine that a leak existed, but it might not determine precisely where the leak was to be looked for, nor whether there might not be more than one.

When we consider that in most houses these pipes are enclosed in the brick, and plastered walls, we shall see that it is no small matter for a plumber to make a thorough and satisfactory inspection, or one which would warrant him in giving to his employer a written guarantee that everything was right.

It having been suggested that in order to render the pipes everywhere open to inspection, and to facilitate access to them in case repairs became necessary, they should pass through the rooms, enclosed in wooden cases supplied with doors, Dr.

Vanderpool replied, that in our narrow houses these boxes would occupy valuable room ; and it might have been added, they would not be regarded as comely decorations to a suit of drawing rooms. Both to the eye and ear they would be unpleasantly suggestive of the purposes for which they were constructed.

One can easily avoid connecting his refrigerators with the city sewers ; and he can generally, in building his own house secure to himself a dry cellar. He can also keep his cellar clean, well ventilated and free from decaying vegetable matter ; but these are the minor sources of poisoning to which Mr. Wingate made reference. It is not so certain that rats and cats can always be prevented from depositing their remains in the air boxes or in other open and unoccupied flues.

We were assured by some of the gentlemen who engaged in the discussion, that in spite of every engineering precaution the traps would sometimes be syphoned ; that they would occasionally become dry by evaporation ; and finally, that if they continued to hold water, the gases would be absorbed by the water and thus make their way into the rooms of the house. No reference was made, I believe, to drain ventilators, communicating with the out door air in front or rear of the house on the one hand, and the top of the house on the other hand ; the value of which means of protection cannot be questioned ; but which are far

from meeting all the difficulties. A draft of air through them cannot always be ensured; and in case of a leak in the pipes, or the accidental displacement of water from the traps they afford little or no protection.

Last of all there is to be noted the accumulation and detention of foul materials in the traps themselves and above the traps, which are often highly offensive, and deleterious; for the removal of which an abundant supply of water, and an almost continuous flow is required.

Dr. Janeway called attention to another source of poisoning, not alluded to by either of the gentlemen who had spoken before, namely, the inhalation of gases into the open mouths of the water pipes which overhang the basins and closets; by which the water itself became impregnated with the gases. In evidence of the possibility of this occurrence, Dr. Janeway referred to some examples of typhoid fever occurring under his observation, which he felt quite sure were caused by drinking water thus impregnated. No remedy was suggested.

It is considered very certain by medical men that the gases generated in our sewers, or the germs developed and conveyed by the gases, are by far the most frequent causes of typhoid fever; and it is almost equally certain that they are the chief sources of diphtheria; but few have suspected, however, what is possibly true, that the sewers are the channels through which many other zymotic

diseases, including perhaps Asiatic cholera, may be conveyed to our families.

I myself entertain this suspicion, but I might have hesitated to express it publicly lest I should be considered an alarmist, had not the same suspicion been expressed by Dr. Janeway in the course of the discussion we are now considering.

Dr. J. C. Peters said that one of the gravest difficulties we had to contend with, was to be found in the large amount of badly-constructed sewers underlying the city, and for which we were especially indebted to the Tweed regime. Their imperfect condition causing obstructions and accumulations, thus favoring the development of poisonous gases. The drainage was also incomplete, owing to the fact that the sewers did not open at the ends of the piers, where the swift currents of water would purify their outlets, and increase the outward flow. For the first of these evils Dr. Peters did not suggest a remedy; but he thought the latter would be remedied in the course of the next ten years.

Prof. Doremus said, in reply to his own question, "What must we do if we have the gases in our sewers?"

If these gases are attempted to be cut off from our houses by water-traps, it does no good; the gases will pass through the water. We must have chemicals in the traps which will decompose the gases; and these must be renewed daily. His ex-

perience and chemistry taught him that there was no other mode of protection.

When, however, through neglect of this precaution, or from any other cause, the gases with their poisonous germs have been admitted, and been absorbed by the furniture, the drapery and the walls, the rooms must be temporarily vacated and disinfected thoroughly by such reagents as chlorine, bromine, etc. Mr. Wingate to the same end would have the furniture more simple, dispensing with drapery altogether.

The drains ought, moreover, to have street ventilators, to enable them to breathe their foul air into the streets rather than into the houses.

To some extent this latter mode of relief is already in operation; but diphtheria and typhoid fever continue.

This completes the proposed analysis of the paper read by Mr. Wingate, and of the ensuing discussion. It will be observed that the statements as to the nature and magnitude of the evil, as well as the possible remedies, are made by responsible men, whose reputations are well known. In some instances—indeed, in most instances—they have, by inference at least, if not in words, subjected their own remedies to criticism. The criticisms of the writer are, therefore, in such cases, only intended to supplement and enforce their own.

Need I remind you in this connection how our hearts were touched when Dr. Doremus, whom we

have all learned to admire no less for his social and domestic qualities than for his scientific attainments, told us that this insidious enemy to human life had entered his own home and taken from him a beloved son, and prostrated another with a lingering and almost fatal sickness. He declared that he would rather have exposed them to the most fatal gases in his laboratory than to this sewer gas, for the poisonous effects of which we have no remedy.

Is it surprising, gentlemen, that, considering the deadly nature of these gases, and the impracticability, or inefficiency of all, or nearly all of the measures for their exclusion which were suggested, that Dr. Willard Parker should have hesitated to accept of Mr. Wingate's opening statement, that it is "foolish" to talk of the risks to health from modern improvements, when plumbing can be made "absolutely safe," and that he should, after all that had been said, at the close of the discussion, declare emphatically that if he were to build a house he would not have it connected in any way with a sewer. He would have all the closets, drains and pipes in an annex; and this is the conclusion, it may be here said, to which many of our most wealthy citizens have already arrived. Not a few of our lately constructed and most elegant mansions have not an inch of plumbing in those portions of their buildings which are usually occupied by their families; and I have

conversed at least with one very intelligent plumber who favors the same practice.

What, then, is the upshot of all this matter? If these sanitary engineers, plumbers, chemists, and hygienists, who were requested to take part in the discussion because of their acknowledged scientific attainments, experience and practical skill, have nothing more to suggest, how is the evil to be successfully met?

With all respect to the distinguished gentlemen, I must say that they have suggested nothing of any importance which is new; nothing that was not known before; nothing, indeed, which has not been tried, and which has not for one reason or another proved itself to be either impracticable or insufficient, and in many cases totally inefficient.

My reply to this question is, that, in reference to these matters, science has not kept pace with civilization; and that without concessions on the part of civilization there is at present no adequate remedy.

Says Bede, "When men lived in houses of willow, they were of oak; and when they lived in houses of oak, they were of willow."

Since his day we have had occasion to observe, that when men left the open plains, and the small hamlets, and crowded themselves into the narrow limits of cities, the ratio of sickness and death were proportionately increased. When, also, in the progress of civilization, the fire-places disappeared,

with their great open throats—the best ventilators ever invented—and decorated cast iron stoves were substituted, house sanitation experienced a loss which no sanitary engineer or architect has ever repaired; and when, in obedience to the same inexorable demands of progress in luxury and æstheticism, gas was substituted for oil, and hot air, or hot steam furnaces for stoves, the hand was again moved forward another point on the dial of human life.

The means employed to light and warm, or as is often, and more correctly said to “heat” our houses, having already deprived us of a large proportion of our oxygen, the plumbers have at last rendered actually poisonous what remained, by connecting the interior of almost every room in our houses with the sewers. Said Dr. Parker, “Would a man connect a vault filled with dead bodies by pipes with the interior of his house? yet this is practically what we do with our sewers. Water is no protection from these gases; from the fatal germs which are generated in these foul places.” He added, also, that he had never seen a case of diphtheria in this city until the Croton water was introduced.

Possibly nothing will so forcibly illustrate the magnitude of the evil we are considering as the fact that it has given birth to a new profession. The calamities necessarily incident to the progress of civilization long since made it necessary, that

there should be a class of educated men whose duties it should be to look after the rights of citizens; and another class to attend to matters of health; and now a condition has arisen which renders necessary a new class of specialists or professional men called "sanitary engineers," who are supposed to be well informed in matters of hygiene, architecture or house construction and engineering, and who for the present seem to find plenty of occupation, and are, no doubt, performing a much needed and very useful service; but of whom it may be said, that, up to the present time, there is no evidence that they have done anything more than to mitigate the evils they have been asked to remove; and indeed there may be found many notable examples in which the best sanitary engineers have failed to effect even a mitigation.

I repeat then, that in order to render pure and innocuous the atmosphere of our houses, whether the sources of its impurity are to be found in our present systems of lighting, heating or drainage, it will be necessary first of all that civilization should make some concessions.

The term "civilization" is here used in its broad and legitimate sense, as including not only mental culture, with progress in science and art; but also the comforts, luxuries, and æsthetics of life, which are its natural and inevitable concomitants. If certain of the latter elements of civilization cannot be dispensed with, it will be found impossible, I

fear, to contend successfully with typhoid fever, diphtheria and many other diseases which now contribute so largely to the increase of our mortality rates.

If we limit ourselves to the consideration of the unwholesome atmosphere of our houses,—although this does not by any means constitute the only possible or probable source of sickness and physical decay incident to civilization—the concessions demanded as a condition of the successful application of our present knowledge of the laws of hygiene are:

First. That all plumbing having any direct or indirect communication with the sewers, shall be excluded from those portions of our houses which we habitually occupy. In other words, that it shall be placed in a separate building or annex.

Second. That we return to the open fire-place, or the grate, as a means of warming our private houses.

Third. A diminished consumption of oxygen by gas burners. It is still an open question, whether we shall be able to light our dwellings with electricity; but so long as we are obliged to depend upon gas we must content ourselves with light, and not insist upon illumination.

The concessions demanded have been named in the order of their relative importance. The necessity for each is urgent, but the first admits of no compromise.

As has been already said, there are many other possible sources of ill health and physical decay incident to civilization, than those referred to especially in this paper.

The wholesome light of the sun is partially excluded from the apartments of wealth and luxury, because it fades the costly rugs and drapery, and offends the educated eye by its vulgar and intrusive gairishness; and not unfrequently, at large receptions, the light of the day is excluded wholly in order that the more æsthetic and kaleidoscopic effects of gas-light may be substituted, regardless of the fact that the air is thus rendered unfit for respiration. Our social habits demand that both children and adults shall devote the hours nature intended for sleep to amusements—which amusements are rendered more intoxicating and pernicious by the prolonged respiration of heated and poisonous air. Dress makes its contribution—utility and regard for health are almost invariably subordinated to the caprice of fashion and the study of effect. Flimsy head-dresses, low necks, short sleeves, tight corsets, high heels and narrow toes do not constitute the sum total of the æsthetic requirements of civilization in matters of dress. Walking, as a means of locomotion and of exercise, is rendered difficult, and sometimes impossible. To romp, or even to move with rapidity and sharp angularity is unseemly in young ladies; and such young men as “move” in the most

refined and polished circles, neglecting robust and manly out-door exercises, pose in attitudes which demand the least possible muscular exertion, or dawdle in effeminate dissipation. Ladies do not sit, but recline in their carriages. In the "best" society there is neither muscle nor back-bone. Almost all respectable citizens ride when they might walk, and complain of the want of breath when the absence of an elevator compels them to ascend a flight of steps. Even when we travel, over-heated cars, long confinement in one position, hurried and irregular meals, dust and smoke bring us to the end of our journey weary and often sick. Railroads have enabled us to accomplish more in life than was possible when men traveled in coaches or on horse-back; but it is doubtful whether, in the shortening of human life it has effected, the loss is not greater than the gain.

All of these evils, and thousands not enumerated, are the necessary incidents to civilization; and medical men are painfully familiar with the impediments they present to the preservation of individual and public health; indeed, as has been already suggested, it was the presence of these evils chiefly, which has rendered our existence as an integral part of society necessary. Nor do I assume too much in saying that were it not for the teachings and judicious practice of medical men, the physical decay of the human race under the adverse influences of civilization would be rapid and complete.

The field which has been opened by this discussion is wide and inviting; but I must ask the Society to limit itself this evening to those matters of house sanitation which alone constituted the subjects of discussion in the February meeting.

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